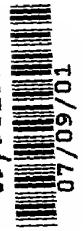




METHOD FOR PRODUCING CLEAN ENERGY FROM COAL

13044 U.S. PTO

09/09/01



Background of the Invention

This application is a further development of the applicant's issued patent No. 5,063,732 which discloses a method for repowering existing electric power plants while co-producing a clean liquid fuel; it also discloses that coal is first pyrolyzed to produce a rich gas which is cleaned and then synthesized to a liquid, and a char which is gasified to make a low Btu gas that is also cleaned and then used to generate electricity; this development resides in improving the referenced method as follows:

- Reduction of the great number of process tubes (reactors) which reduces capital investment to make it economically viable.
- Elimination of the complex charging system which comprises a revolving means to make it easy to maintain.
- Improving the heating of the charge to increase efficiency.
- Insuring that the gases produced in the process reactor flow in the proper direction to cause the cracking of undesirable cancer causing constituents of the coal.
- Blowing the char gasifier in a down draft direction to overcome the excessive entrainment of particulate matter in the low Btu gas.
- Preventing the plugging of the slagging port of the gasifier to obtain the free flow of slag out of the gasifier.
- Mitigating the cooling effect of the slag quench to prevent the premature solidification of the molten slag before it is quenched.